

1 MFKSLTKVNVKVP IGENNENEQSSRRNEEGSHPSNQSQQTAAQENKGEKSLKTKSTPV Cng3BFL.pro  
 1 M-----AKINTQYSHPSR-----THLKVKTSDDRLNRAENGLSRAHSSSEETS CNGA3.pro  
 1 M-----KLS-MNNIINTQOSFVTM-----PNVIMPDIEKEIRMEMENGACSSFSFEDDDSA CNGA1.pro  
  
 61 TSEFHTNIQDKLSKKNSSGDLTTPNDPQNAAEPTGTVPQEKEMDPGKEGPNSPQNKPPA Cng3BFL.pro  
 44 SVLOPGIAMETRGLADSGQSGFTGQ-----GIARLS---RLIFL---LRRWAARHVHHQ CNGA3.pro  
 50 STSE-----ESENENPHARGSEFSYK-----SLRKGGPSOREQYLPGAIALFNVNNSNK CNGA1.pro  
  
 121 APVINEYADAQLHNLVKRMQROTALYKKKLVEGDLSSPEASPOAKPTAVPPVKESDDRP Cng3BFL.pro  
 92 DQGEFSFPDRFRGAELKEVSSQESNAQANVGSOEPADRGRSAWPLAKCNTNTSNNTEEEK CNGA3.pro  
 99 DQGEFE-----K KKKKKEKKS[S]SDDKNENKNDPEK KKKKKDKDEK KKKKEEK[S]KDKK CNGA1.pro  
  
 181 TEHYRLLWFKVKRMPLELYLKRIKLPSNDSYTDRLYLLWILLVTLA---YNWNCWFIP Cng3BFL.pro  
 152 KTK-----KKDAIV-----VDPSSNLYRWLTATLPVFNWY---LLTC CNGA3.pro  
 149 EFE-----KKEVVV-----IDPSCNTYYNWIFCITLPVMYNWT---MVIA CNGA1.pro  
  
 239 RLVEPYQTA[N]NIHYWLIADIIQDIIYLYDMLEIOPRLQEVRGCDIIVDSNELRKHYRTSP Cng3BFL.pro  
 169 RACFDELOSEYIMLWLVLDYSADVLVYLDV-IVRARTGFLEQGLMVSDTNRLWQHYKTT CNGA3.pro  
 186 RACFDELOSDYLEYWLILLDYVSDIVYLIIDM-EVTRTGYLEQGLLVKEELKLINKYKSNL CHGA1.pro  
  
 299 KFOLDVASIIPEDICVIFFFGN-EMFRANRMLKYTSFFEFNHHSIMDKAYIRVIRTT Cng3BFL.pro  
 248 QFKLDVLSLPTDLAVLKVGCTNYPEVRFNRLKFSRLFEFFDRTETRTNYPNMFRIGNLV CNGA3.pro  
 245 QFKLDVLSLPTDLILFKLGMNYPEIRINRLIRFSRMEFFEOQRTETRTNYPNIFRISNLV CHGA1.pro  
  
 358 GYLLEFLHUNACVYVWASNYEGIGTTRWVYDGEFN-----EYLRCYWAVRFTLTIG Cng3BFL.pro  
 308 IYILIIHWNACIYFAISKFIFGTDVWVYPNISPEHGRISRKYIYSLYWSTLTLTIG CNGA3.pro  
 305 MYIVLIIHWNACVYFYSISKALGFNDTWVYPDINDPEFGRIARKYVYSLYWSTLTLTIG CHGA1.pro

FIG. 1.

410 GLEFQTLFEIVFQLLNFFESGVFVFSLLJGQMRDVITGAATANQNYFRACMDPTIAYMNNY Cng3BFL.pro  
368 ETPPPVKDEEYLFVVDVFLVGLIFATIVGNVGSISMNNAASRAEFQAKIDSITKOYMQFR CNGA3.pro  
365 ETPPPVRDSEYVEFVVDFLIGVLIFATIVGNIGSMISNMNAARAEFOARIDAIKQYMHFR CNGA1.pro

470 SIPRLVQKRVRTWYETWDSQRMLEDSDILKILLETTVQLALAIADVNESIIISKVDLFKGCDD Cng3BFL.pro  
428 KVTKDIEIRVIRWFDYLMANKKTVDKEVLSLPDKLKAEIAINVLHDLTLKKVRIFQDCE CNGA3.pro  
425 NVSKDMEKRVIRWFDYLMANKKTVDKEVLSLPDKLRAEIAINVLHDLRLKKVRIFADCE CNGA1.pro

530 TQMIYDMIRIKSVILPGLFVCKKGEIGKEMYIIKHGEVQVLGGPDDGTKVIVITLKAGSV Cng3BFL.pro  
488 AGLLVELVLKIRFTVESP GDYICKKGDIGKEMYIINEGKLAVVAD-DGVTQFVVLSDGSY CNGA3.pro  
485 AGLLVELVLKIQEQVYSPGDYICKKGDIGREMYIIKEGKLAVVAD-DGVTQFVVLSDGSY CNGA1.pro

590 FGEISILIAAGG---GNRRRTANVVAHGFANILTLDDKKTIOEIVHYPDSEIRIIMKRR-VL Cng3BFL.pro  
547 FGEISILNIKSGSGNRRRTANIRSIGYSDFCLSKDDLMALTEYPEAKKALEEKGRQIL CNGA3.pro  
544 FGEISILNIKSGKAGNRRRTANIKSIGYSDFCLSKDDLMALTEYPDAKTMLEEKGRQIL CNGA1.pro

646 IKQAKATAEATPPRKDLALLFPKREETPKLEKILGGTGKASLARLLKIKREQAQKKEN Cng3BFL.pro  
607 MKDNIIDEIARAGAD---PKDLEEKV---EQLGSSLDTLQTRFARLL----- CNGA3.pro  
604 MKDGLDLNIAAGSD---PKDLEEKV---TRMEGSDLLQTRFARLL-----CNGA1.pro

706 SEGEEEEKENEEDKQKENEKQKENEEDKQKENEEDKQGREPEEKPLDRPECTASPIAVEE Cng3BFL.pro  
649 -----AEYNATQMKQRIISOLESQVKGCGDK-----PIADGE CNGA3.pro  
646 -----AEYESMOOKLKQRIITKVEKFLKPLIDT-----EFSSIE CNGA1.pro

766 EFHSVRRTVLPRGTSRQSLIIISMAPSAEGGEVLTIEVKEKAKQ. Cng3BFL.pro  
682 VP-----GDATKTED-----KQQ. CNGA3.pro  
679 GE-----GAESGPID-----ST. CNGA1.pro

FIG. 1. (CONTINUED)



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CCATCCTAATACGACTCACTATAGGGCTCGAGCGGCCGCCGGCGAGGTCATTTCTCTACCTTAAGGCACAGTCATA  
AATACAGAGGTTTTCAGAACCACTCAGAGAAGATGTTTAAATCGCTGACAAAAGTCAACAAGGTGAAGCCTATAG  
GAGAGAACAAATGAGAATGAACAAAAGTTCTCGTCGGAATGAAGAAGGCTCTCACCCAAAGTAATCAGTCTCAGCAAACC  
ACAGCACAGGAAGAAAACAAAAGGTGAAGAGAAAATCTCTCAAAACCAAGTCAACTCCAGTCACGTCCTGAAGAGCCACA  
CACCAACATACAAGACAAACTCTCCAAAGAAAAATTCCTCTGGAGATCTGACCACAAAACCTTGACCCCTCAAAAATGCAG  
CAGAACCAACTGGAACAGTGCCAGAGCAGAGGAAGAAATGGACCCCGGGAAGAAAGGTCCAAAACAGCCCCACAAAACAAA  
CCGCCCTGCAGCTCCTGTTATAATGAGTATGCCGATGCCAGCTACACAACTGGTGAAAAGAAATGCCGTCAAAGAAC  
AGCCCTCTACAAGAAAAGTTGGTAGAGGAGATCTCTCCTCACCCGAAGCCAGCCCCACAACTGCAAAAGCCCCACGG  
CTGTACCACCAGTAAAAGAAAGCGATGATAAGCCAAACAGAACATTACTACAGGCTGTGTGGTTCAAAGTCAAAAAG  
ATGCCCTTTAACAGAGTACTTAAAGCGAATTAAACTTCCAAAACAGCATAGATTTCATACACAGATCGACTCTATCTCCT  
GTGGCTCTTGCTCACTCTTGCCCTATAACTGGAAGTGTGGTTTATACCAGTGGCCTCGTCTTCCCCATATCAAA  
CCGCAGACAACATACTACTGGCTTATTGCGGACATCATATGTGATATCATCTACCTTTATGATATGCTATTATC  
CAGCCCAGACTCCAGTTTGTAAAGAGGAGAGACATAATAGTGGATTCAAATGAGCTAAGGAACACTACAGGACTTC  
TACAAAATTCAGTTGGATGTCGCATCAATAATACCATTTGATATTTGCTACCTCTCTTTGGGTTTAATCCAATGT

**FIG. 2.**



TTAGAGCAAAATAGGATGTTAAAGTACACTTCATTTTTTTGAATTTAATCATCACCTAGAGTCTATAATGGACAAAAGCA  
TATATCTACAGAGTTATTCCGAACAACCTGGATACTTGCTGTTTATTCTGCACATTAATGCCCTGTGTTTATTACTGGGC  
TTCAAACATATGAAGGAATTGGCACTACTAGATGGGTGTATGATGGGGAAGGAAACGAGTATCTGAGATGTTATTATT  
GGCAGTTCGAACCTTAATTACCAATTGGTGGCCTTCCAGAACCAAACTTTATTGAAAATTGTTTTTCAACTCTTG  
AATTTTTTCTGGAGTTTTTGTTCTCCAGTTTAATTGGTCAGATGAGAGATGTGATTGGAGCAGCTACAGCCAA  
TCAGAACTACTTCCGGCCTGCATGGATGACACCATTTGCCCTACATGAACAATTACTCCATTCCATAAACTTGTGCAAA  
AGCGAGTTCGGACTTGGTATGAATATACATGGGACTCTCAAAGAATGCTAGATGAGTCTGATTGCTTAAGACCCCTA  
CCAATAAGGTCCAGTTAGCCCTCGCCATTGATGTGAACCTTCAGCATCATCAGCAAAAGTCGACTTGTTCAAAGGGTTG  
TGATACACAGATGATTATGACATGTTGCTAAGATTGAAATCCGTTCTCTATTTGCCCTGGTGACTTTGTCTGCAAAA  
AGGAGAAATTGGCAAGGAAATGTATATCATCAAGCATGGAGAAAGTCCAAGTTCTTGGAGGCCCTGATGGTACTAAA  
GTTCTGGTTACTCTGAAAGCTGGTGGTGTGGAGAAATCAGCCTTCTAGCAGCAGGAGGAAACCGTCTGAAC  
TGCCAATGTGGTGGCCACGGGTTTGCCAATCTTTTAACTCTAGACAAAAAGACCCCTCCAAGAAATCTAGTGCAAT  
ATCCAGATTCTGAAAGGATCCCTCATGAAGAAAGCCAGAGTGCTTTTAAAGCAGAAAGGCTAAGACCGCAGAAAGCAACC  
CCTCCAAGAAAAGATCTTGCCCTCCTCTTCCCACCGAAAGAGACACCCAAACTGTTTAAAACTCTCCTTAGGAGG

**FIG. 2.** (CONTINUED)



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CACAGGAAAAGCAAGTCTTGCAAGACTACTCAAATTGAAGCGAGAGCAAGCAGCTCAGAAGAAAATTCTGAAG  
GAGGAGGGAAGGAAAAGAAAATGAAGATAAACAAAAAGAAAATGAAGATAAACAAAAAGAAAATGAAGATAAAA  
GGAAAAGAAAATGAAGATAAAAGATAAAAGGAAGAGAGCCAGAGAGAGCCACTGGACAGACCTGAATGTACAGCAAG  
TCCTATTGCAGTGGAGGAAGAACCCCACTCAGTTAGAAAGGACAGTTTTACCCAGAGGGACTTCTCGTCAATCACTCA  
TTATCAGCATGGCTCCTTCTGCTGAGGGCGGAGAGAGGTTCTTACTATTGAAAGTCAAAGAAAAGGCTAAGCAAATAA  
ATGTTTGATTATCTTTAGATGTGATAAGCTAGTTCCCAAAGTGATTGTACCTAGGATTGTAACCTTAAATTAACGAG  
GGGAAACGACATGCTGGGACCCCTTGAGAAACGAAAGGCAAATCCCTAGCTTAGTTTCTAGGACTTATCTGAGAGTGT  
GATTTCATGCAGTGGTAATAAGAAGATTATTAAGCAAAAAAAGAAAAAAGAAAAAAGAAAAA

FIG. 2. (CONTINUED)



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ATGTTTAAATCGCTGACAAAAGTCAACAAGGTGAAGCCTATAGGAGAGAAACAATGAGAAATGAACAAAAGTTCTCGTCGGAA  
TGAAGAAGGCTCTCACCCAAAGTAATCAGTCTCAGCAAAACCACAGCACAGGAAGAAAACAAGGTGAAGAGAAATCTCTCA  
AAACCAAGTCAACTCCAGTCAAGTCTGAAGAGCCACACACCAACATACAGACAAAACCTCTCCAAGAAAATTCCTCTGGA  
GATCTGACCACAAACCCCTGACCCCTCAAAATGCAGACAACCAACTGGAACAGTGCCAGAGCAGAAAGAAATGGACCCCGG  
GAAAGAAGTCCAAACAGCCCAAAAACAACCGCCTGCAGCTCCTGTATAATGAGTATGCCGATGCCAGCTACACA  
ACCTGGTGAAAAGATGCGTCAAAAGAACAGCCCTCTACAAGAAAAGTTGGTAGAGGGAGATCTCTCCTCACCCGAAGCC  
AGCCACAACTGCAAAAGCCACGGCTGTACCCACAGTAAAGAAAGCGATGATAAGCCCAACAGAACATTACTACAGGCT  
GTTGTGGTTCAAAGTCAAAAAGATGCCTTTAACAGAGTACTTAAAGCGAATTAAACTTCCAACAGCATAAGATTACATA  
CAGATCGACTCTATCTCCTGTGGCTCTTGCTGTCACTCTTGCCCTATAACTGGAACCTGCTGGTTATACCACTGCGCCTC  
GTCTTCCCATAATCAAAACCGCAGACAACATACACTACTGGCTTATTGCGGACATCATATGTGATATCATCTACCTTTATGA  
TATGCTATTTATCCAGCCCAAGACTCCAGTTTGTAAAGAGGAGGAGACATAATAGTGGATTCAAATGAGCTAAGGAAACACT  
ACAGGACTTCTACAAAATTTAGTTGGATGTGCGCATCAATAATACCATTTTGATATTTGCTACCTCTTCTTTGGGTTTAAT  
CCAATGTTAGAGCAATAGGATGTTAAAGTACACTTCATTTTTTTGAATTTAATCATCACCTAGAGTCTATAATGGACAA  
AGCATATATCTACAGAGTTATTCGAACAACTGGATACTTGCTGTATTCTGCACATTAATGCCTGTGTTTATTACTGGG

FIG. 3.



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CTTCAAACATATGAAGGAATTGGCACTACTAGATGGGTGTATGATGGGGAAGGAACGAGTATCTGAGATGTTATTATTGG  
GCAGTTCGAACTTTAATTACCATTTGGTGGCCTTCCAGAACCCACAACTTTATTGAAAATTGTTTTTCAACTCTTGAATTT  
TTTTTCTGGAGTTTTTGTGTCTCCAGTTTAAATTGGTCAGATGAGAGATGTGATTGGAGCAGCTACAGCCAAATCAGAACT  
ACTCCGGCCCTGCAATGGATGACACCAATTGCCCTACATGAACAAATTACTCCATTCTCTAAACTTGTGCAAAAAGCGAGTTCCGG  
ACTTGGTATGAATATACATGGGACTCTCAAAGAAATGCTAGATGAGTCTGATTTGCTTAAGACCCCTACCAACTACGGTCCA  
GTTAGCCCCTCGCCATTGATGTGAACCTTCAGCATCATCAGCAAAAGTCGACTTGTTCAAAGGTTGTGATACACAGATGATTT  
ATGACATGTTGCTAAGATTGAAATCCGTTCTCTATTTGCCCTGGTGACTTTGTCTGCAAAAAGGAGAAAATTGGCAAGGAA  
ATGTATATCATCAAGCATGGAGAAAGTCCAAGTTCTTGGAGGCCCTGATGGTACTATAAGTTCTGGTTACTCTGAAAAGCTGG  
GTCCGGTGTTTGGAGAAATCAGCCCTTCTAGCAGCAGGAGGAGGAAACCGTCGAACTGCCAAATGTGGTGGCCACGGGTTTG  
CCAATCTTTTAACTCTAGACAAAAGACCCCTCCAAGAAATTCTAGTGCAATTATCCAGATTCTGAAAAGGATCCTCATGAAG  
AAAGCCAGAGTGCTTTTAAAGCAGAAGGCTAAGACCCGAGAAACCCCTCCAAGAAAAGATCTTGCCCTCCTCTTCCCC  
ACCGAAAGAGACACCCAACTGTTTAAAACCTCTCCTAGGAGGCACAGGAAAAGCAAGTCTTGCAAGACTACTCAAT  
TGAAGCGAGAGCAAGCAGCTCAGAAGAAAAGAAAATTCTGAAGGAGGAGAGGAAAAGAAAATGAAGATAAAACA  
AAAGAAAATGAAGATAAAACAAAAGAAAATGAAGATAAAAGGAAAAGAAAATGAAGATAAAAGGAAAGAGAGCCGAGA

**FIG. 3.** (CONTINUED)



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AGAGAAAGCCACTGGACAGACCCTGAAATGTACAGCAAGTCCTATTGCAGTGGAGGAAGAACCCCACTCAGTTAGAAAGGACAG  
TTTTACCCAGAGGGACTTCTCGTCAATCACTCATTATCAGCATGGCTCCTTCTGCTGAGGGCGGAGAAAGAGGTTCTTTACT  
ATTGAAGTCAAAGAAAAGGCTAAGCAATAA

**FIG. 3.** (CONTINUED)



MFKSLTKVNVKPIGENNENEQSSRRNEEGSHPSNQSQQTAAQENKGEKSLKTKSTPVT  
EEPHTNIQDKLSKKNSSGDLTTNPDQPQAAEPTGTVPEQKMDPGKEGPNPQNKPAPVI  
NEYADAQLHNLVKRMRQRTALYKKLVEGDLSSPEASPTAKPTAVPPVKESDDDKPTEHYR  
LLWEKVKKMPLTEYLKRIKLPNSIDSYTDRLYLWLLVTLAYNWCWFIPRLVFPYQTAD  
NIHYWLIADIICDIIYLYDMLFIOQRLQFVRGGDIIVDSNELRKHRTSTKFFQLDVASIIPE  
DICYLFFGFNPMFRANFMLKYTSFFEFNHHLESIMDKAYIYRVIRTTGYLLFILHINACVY  
WASNYEGIGTTRWVYDGEENEYLRCYWAVRTLITIGGLPEPQTLFEIVFQLLNFFSGVFVE  
SSLIGQMRDVI GAATANQNYFRACMDDTIAYMNNYSIPKL VQKRVRTWYEYTWDSQRMIDES  
DLLKTLPTTVQLALADVNFESIIISKVDLFKGCDTQMIYDMLLRLLKSVLYLPGDFVCKKGEIG  
KEMYIIKHGEVQLGGPDGTVLTLKAGSVFGEISLLAAGGNRRRTANVVAHG FANLLTLD  
KKTLOEILVHYPDSEIRILMKKARVLLKQAKTAEATPPRKDLALLFPKKEETPKLFKTLILGG  
TGKASLARLLKLRQAAQKKENSEGGEEEGKENEDKOKENEDKOKENEDKDKGR  
EPEKPLDRPECTASPIAVEEEPHSVRRTVLPRGTSRQSLIISMAPSAEGGEEVLTIEVKEK

AKQ

FIG. 4.